1: Conzemius M-4, 5 (1921) 1932
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them. There is, however, a semiwild growing variety of a purplish color, which is called *usi* by the Miskito and Sumu; this is probably the one mentioned by Dampier (I, 9) and M. W. (310).

OTHER VEGETABLES.—Pumpkins and squashes (*Cucurbita pepo* L.; M.: *iwa;* S.: *ati*) are also grown to some extent, while the chayote or chocho (*Sechium edule* Sw.; M. and S.: *mukula*) and the tomato (*Lycopersicum esculentum* Mill.) are cultivated in a desultory way. The latter plant appears to be indigenous, but there is no native name for it.

MAIZE.—Maize or Indian corn (*Zea mays* L.; M.: *aya;* S.: *am, ama*), which forms the staple food practically all over Central America, is sparsely cultivated by the Miskito; however, it was already observed among them during the latter part of the seventeenth century by Raveneau de Lussan (438) and by M. W. (308, 310). This food plant is more esteemed by the Sumu, especially by the Twahka and Ulwa, who grow an inferior quality of inbred maize. It is stored by hanging it under the roof over the smoke in order to prevent molding.

BEANS.—The red or black beans (*Phaseolus vulgaris* L.), which rank as a staple food in large areas of northern and western Central America, are grown to a very small extent by either Miskito or Sumu. The red variety is the one usually found; it is somewhat smaller than the red kidney bean of the United States. Both tribes have a native name (M.: *snak, snik;* S.: *sinak*) for the plant; as these designations are also applied to a wild-growing vine, bearing small beanlike fruits, it is very probable that beans have been introduced only in recent times. In fact, this food plant is not mentioned by any one of the seventeenth century authors.

RICE.—Rice (*Oryza sativa* L.) is rarely cultivated and has been introduced recently; it is known by its English or Spanish name. The grain is heavy and rounded, and it differs considerably from the native wild rice of tropical America (*Zizania* sp.), with long, narrow, dark grain.

PEJIVALLE PALM.—The pejivalle or pijibay palm (*Guilielma utilis* Oerst.; M. and S.: *supa*) is cultivated for its edible fruit all over the Mosquito Coast, usually around the Indian huts. The Central American name for this plant appears to have been taken from the Arawak language of Haiti. The palm is probably of South American origin and is extensively cultivated in the tropical part of that continent. It is there known by a great variety of names, of which the following are the best known: Gachipáez, cachipaes or cachipay (Colombia), chonta[a] (Ecuador), piritu, prijao (Venezuela), pupunha (Brazil), paripu, paripi and peach palm (Guianas).

[a] From the Quichua *chontarúrru* or *chontaduro*.

1: Conzemius M-4, 5 (1921) 1932
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seeking new colonies; their abdomen is roasted and eaten by both tribes.

Small fish is wrapped in bijagua leaves and roasted in the hot ashes. This procedure is the usual one while away from home when there is no cooking pot at hand. Fish prepared in this manner has an exquisite taste, for all the savor is preserved. Such a leaf parcel is called *kalasi* by the Miskito and *wiwana* by the Sumu. The Miskito living near the sea also fry fish in coconut oil. The latter is obtained by grating the nut and boiling the milk until the oil rises to the top, when it is skimmed off.

ANTHROPOPHAGY.—It is very probable that in former days slaves captured from the enemy tribes were occasionally an article of diet among Miskito and Sumu. There is no lack of proofs that cannibalism existed among the Sumu. It was reported by Columbus in 1502 from the region between Cabo Honduras and Cabo Gracias a Dios. In 1612 the Twahka killed and devoured a party of Spaniards (Conzemius, b: 27). Later, during the second half of the seventeenth century, a buccaneer was roasted and eaten by the Kukra of Corn Islands (Exquemelin, Engl. ed.: 114). A Spanish document from 1739 or 1740 states that the Tuñla Indians used to capture Christians in order to fatten and then eat them.* M. W. (305) tells us that the Ulwa first drew out the finger and toe nails of their unhappy victims, while the latter were still alive, and knocked out their teeth with stones. Then they roasted them over a framework of green sticks. They considered this food the best of all.

Cannibalism was, however, probably a ceremonial custom, a ritual of vengeance. The body of the enemy was mutilated and cut to pieces, in order to destroy him entirely. The hair, teeth, and nails were extracted and carried as necklaces, as particularly magical virtues were attributed to these body parts. To eat an enemy was indeed considered the most profound of all insults, for by such an act he would be destroyed, not only for this world, but also for the hereafter.

PRESERVING MEAT AND FISH.—After a successful chase the meat which is to be preserved for some time is placed on a low stage or framework (M.: *tria;* S.: *pala, lim*) of green sticks, and slowly barbecued by the action of a fire lighted underneath, assisted by the rays of the tropical sun. No salt is added to it. From time to time it is turned. This fire is kept up for several days, after which the meat becomes nearly as dry as our smoked beef.

* Noticias estadísticas del Reino de Guatemala, Guatemala, vol. II, No. 32, Oct. 16, 1927.

1: Conzemius M-4, 5 (1921) 1932
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Fish may also be preserved by drying it in the sun, after having cleaned it and rubbed salt into the scraped flanks.

VEGETABLE FOOD.—Vegetables, such as cassava, sweet potatoes, tania, yams, green bananas, and plantains, are either boiled in water or (occasionally in cocoanut milk) with meat or fish, or they are roasted in the hot ashes. Cassava prepared by the last-named process is called *bulbul* by the Miskito.

The fruit of the pejivalle palm is also boiled in water, after which the skin is easily removed. Inferior varieties of this fruit are generally mashed and consumed in the shape of a beverage, either soured or fermented.

A sort of bread (M.: *tani;* S.: *dipis*) is also made. Dry maize is ground on the metate with the addition of a little water. It is then wrapped in large bijagua leaves after the manner of the "tamales" of the Ladinos. A few days later when this mass has turned sour it is baked in the embers. The Sumu also bake it occasionally, immediately after grinding the maize, without allowing it to turn sour; it is then known to them by the name *pan* (from the Spanish "pan"). The Ulwa make this bread generally from unripe maize.

The pith or "cabbage" of various palms (*Attalea, Chamaedorea, Euterpe, Iriartea, Oreodoxa*) may be eaten either pickled or cooked; it is slightly bitter in taste. The pith and the small acid fruits of the pingwing or piñuela (*Bromelia pinguin* L.; M.: *ahsi;* S.: *ahsi, wakari*) are also esteemed. In times of scarcity the tender young bamboo shoots are also cooked and eaten.

The leaves of a small wild-growing plant, called cucumber or calaloo (*Phytolacca decandra* L.), are occasionally eaten as "spinach" by the Indians, who have taken this habit from the Creoles and Negroes. The common name "calaloo" for this plant savors of African origin; the Miskito call it *tilba pata* "tapir food." Indians and Ladinos use the leaves sometimes as soap, hence the local Spanish name "jaboncillo."

WILD FRUITS.—The Indians also collect the fruits of a number of wild-growing trees, of which the following are the most important for food: Hog plums (*Spondias lutea* L.; M.: *pahara;* S.: *walak*), nances or nancitos (*Byrsonima crassifolia* H. B. K.; M. and S.: *krabo, karabo*), zapotes or mammee apples (*Lucuma mammosa* Gaertn.; M.: *kuri;* S.: *sipul*), sapodillas or naseberries (*Sapota zapotilla* Coville; M.: *iban;* S.: *iban, sabakan*), guapinol or locust tree (*Hymenaea courbaril* L.; M.: *lâua, laka;* S.: *tipi*), several species of dwarf guavas (*Psidium* sp.; M.: *kru;* S.: *kuru, arayañ*), breadnut tree (*Helicostylis ojoche* K. Sch.; M. and S.: *pisba, tisba*), monkey apple (*Moquilea platypus* Hemsl.; M.: *puramûira;* S.: *lasat*), beach or sea grape (*Coccoloba uvifera* L.; M. and S.: *waham*), icaco or coco plum (*Chrysobalanus icaco* L.; M. and S.: *tauo*) and several species of granadillas or fruits of passion

1: Conzemius M-4, 5 (1921) 1932
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flowers (*Passiflora* sp.; M.: *drap, tutbuñ;* S.: *wahluluñ, suñsuñ, wahamtari*).

ENSILAGE.—A sort of ensilage is occasionally made by the Miskito of various foodstuffs, as green bananas or plantains and pejivalles, and by the Sumu of boiled maize. Such food is known by the name *bisbaya;* it may be kept for six months, or even longer.

Green bananas or plantains are peeled and buried in the ground upon a layer of large bijagua leaves and then covered up with another layer of leaves and earth. The Indians claim that no worm will get into the food when the work has been done carefully. The whole is not uncovered until required for food. The fruit retains its natural whitish color, but will turn black immediately upon exposure to the air. *Bisbaya* is consumed either in the shape of a beverage, after being boiled with water, or it is baked between leaves into a sort of bread (M.: *bisbaya tanka;* S.: *bisbaya pañni*). [a]

The fruit of the pejivalle palm, which has been stored in this manner, is always taken in the shape of a drink. It is boiled again, when taken out of the soil, mashed, strained, and mixed with wabul.

The Sumu rarely make use of this manner of preserving food, except for maize. The latter is steeped in lye of wood ashes to remove the outer skin, and then buried for a few months. After being taken out of the ground it is preserved in baskets over the smoke until needed as food. These various kinds of *bisbaya* all have a very offensive odor, which may be smelled from a great distance.

Another manner of ensiling is practiced more frequently by the Sumu. Maize or bananas from which the skin has been removed are placed in running water until they partially ferment, and are then dried in the sun. For this purpose they are made into large leaf parcels and deposited in the neighboring creek. This sort of food (M. and S.: *kwakwa, tchra, tulis*) has also a somewhat disagreeable odor.

FOOD ADJUNCTS: NARCOTICS, STIMULANTS, EXCITANTS, ETC.

TOBACCO (*Nicotiana tabacum* L.).—The sukia uses tobacco as a narcotic in order to throw himself into a condition of wild ecstasy; during such an abnormal conditon he is supposed to enter into relations with the spirits. He also blows tobacco smoke over the sick persons in order to purify them.

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[a] Bell (b: 27) states that the Creoles of Bluefields made plantains into "foofoo," that is, cut up, put into large baskets, and buried in the earth until partially rotten, then dried in the sun and made into flour. The name "foofoo," corrupted by the Miskito into *pupu*, is now applied to green bananas or plantains which have been cooked, mashed, and formed into the shape of tamales.

2: Kirchhoff E-4 (no date) 1948
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Harpoons with floats attached are used for large fish and for manatees, the latter being taken in the lagoons and at sea. Harpoons with long retrieving lines but without floats are used for sea turtles. The *Sumo* lasso young crocodiles.

Domesticated animals.—No early source mentions dogs, but they are now common. Pigs, sheep, goats, cattle, horses, and cats have been introduced. The people tame a great variety of wild birds and several species of mammals. The latter are even suckled by the women. Species of native bees are kept in hives near the houses.

Food preparation.—Food may be boiled, sometimes in coconut milk. Meat and fish are broiled or roasted in hot ashes, and fish may be fried in coconut oil. The *Paya* fry green pineapple. Salt is used as a condiment but rarely as a preservative. Sauces of red peppers, lime, and salt are made by the *Mosquito*. The *Paya* use chili as a sauce or as a substitute for other food. Tamales are made of manioc. Maize dough, sometimes soured (*Mosquito*), is wrapped in leaves and baked. This and manioc dough may be made into tortillas, an item introduced into the region only in recent years. Manioc is made into bread, which is baked in the open fire.

Numerous beverages are made of liana sap, maize, honey, green plantains, and the like. Some of these are made of a sour paste, which is diluted with water before it is eaten. Such food is usually carried while traveling. Alcoholic beverages are prepared in canoes (*Mosquito*) or log troughs (*Paya*) and stored in earthenware pots. Fermentation is hastened in various ways, notably by chewing uncooked or cooked maize or manioc and spitting it into the mixture.

Preserving and storage of food.—Fish is dried in the sun and meat is dried on a three-legged babracot. The *Mosquito* make a mixture of green bananas and pejibaye palm nuts which may be kept for 6 months or longer. It can be made into a beverage or baked as bread. The *Sumo* preserve boiled maize by steeping it in lye to remove the hull and then burying it. The *Sumo* also make up large parcels of maize or peeled bananas, which are placed in running water until partially fermented, then dried in the sun. Live turtles are kept in stockades in shallow water.

VILLAGES AND HOUSES

Mosquito villages (pl. 35, *bottom*) had between 100 and 500 inhabitants. *Sumo* villages appear to have been much smaller. Formerly, communal houses, called "palenques," had compartments for each family. Some were about 40 by 80 feet (about 12.5 by 25 m.); smaller communal houses were built by the *Mosquito*. *Sumo* houses had an elaborately carved central post. House plans were rectangular, the ends being rounded, elliptical (*Paya*), or circular (*Mosquito* of Honduras). At the present

3: Pijoan D-5 (ca. 1945) 1946
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The most important fruit plant of the Miskito is the banana *(siksa)*. It is not indigenous to America but was brought by the Spaniards. The banana tree produces one good crop and the new shoots appearing at its base are transplanted for another crop. Of the great variety of bananas and plantains grown by the Indians the most common is the *Gros Michel*. Sweet cassava *(yauhra)* is the staple food for the coastal Miskito and it is also cultivated by those living inland. Eddoes or tanias *(dusiwa)* which are known also by the name "Coco", are cultivated for their edible tubers.

A semiwild yam and sweet potato *(tawa)* is eaten; pumpkins and squashes are also grown to some extent. Maize *(aya)* or Indian corn, which forms a staple food practically all over Central America, is sparsely and occasionally cultivated by the Miskito. When grown the corn is stored by hanging it under a roof over a low fire and smoked in order to prevent molding. Red or black beans *(snek)* are grown to a very small extent by the Miskito. Rice has been recently introduced. The grains of rice are heavy and rounded and differ from our native wild rice or those kinds ordinarily found in the tropics. The pejibaye *(supa)* is cultivated for its edible fruit; the Central American name for this plant appears to be taken from the Arawak language of Haiti. It is not a native plant in this area, so that it is found only in cultivated state and deserted palms indicate former village sites. The coconut palm *(kaya)* is found in a semiwild state. The Indians drink the juice of the nut, eat the tender kernel, and extract the oil. Oil is obtained by skimming the top of a boiling decoction of kernels and water.

Sugar cane *(kayu)* brought by the Spaniards during the sixteenth century is grown by the Miskito. They have a mill to extract the juice but have not learned to prepare sugar from it. They drink the fresh juice of the plant or allow it to ferment; sometimes it is boiled into a brown syrup which on cooling partially hardens to form a sort of brown sugar. Cacao which is indigenous, is sometimes cultivated but the pods are usually obtained from wild trees.

The most common native fruit trees are pineapples *(pihto)*, papaws or papayas *(tpas)*, avocados or alligator pears *(sikya)*, soursops (*dwarsop*), cashews (*kasan*) and plums (*polms*). The common fruit *(dwarsop)*, cashews *(kasan)* and plums *(ploms)*. The common fruit dock, grapefruit, mangoes, breadfruit, tamarind, and rose apples. A few bushes of cotton, chili peppers and annato are found near every lodge.